



Victorian Certificate of Education
2010

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures								
Words								

PSYCHOLOGY

Written examination 1

Wednesday 9 June 2010

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Area of study	Number of questions	Number of questions to be answered	Number of marks
A	1. Brain and nervous system	18	18	18
	2. Visual perception	13	13	13
	3. States of consciousness	13	13	13
B	1. Brain and nervous system	6	6	18
	2. Visual perception	4	4	14
	3. States of consciousness	3	3	14
Total				90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 19 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.

- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is correct or that best answers the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – Brain and nervous system

Question 1

The human brain structure which contains almost three quarters of the brain's neurons and which is responsible for processing information as well as reasoning, planning and imagining is the

- A. frontal lobe.
- B. temporal lobe.
- C. cerebral cortex.
- D. cerebral hemisphere.

Question 2

Which of the following statements best describes the corpus callosum?

- The corpus callosum transfers information between the cerebral hemispheres of the brain.
- Patients with brain damage are unable to send neural information through the corpus callosum.
- The corpus callosum ensures that each hemisphere of the brain is able to function independently.
- The corpus callosum is found in the cerebral cortex, and connects the two hemispheres of the brain.

Question 3

Visual images received in the left visual field are processed in the

- A. occipital lobe of the left and right hemispheres.
- B. temporal lobe of the right hemisphere only.
- C. occipital lobe of the right hemisphere only.
- D. occipital lobe of the left hemisphere only.

Question 4

Mandy fell off her bike and suffered some mild brain damage. Doctors tested her and found that Mandy could pronounce the word 'accident' but she was unable to give a meaningful verbal description of her accident.

The doctors were most likely to conclude that the part of Mandy's brain affected was

- A. Broca's area.
- B. the frontal lobe.
- C. the parietal lobe.
- D. Wernicke's area.

Question 5

Almal bumped his head in a heavy fall at a skate park. When he was still recovering in hospital, he could describe a man who came to visit him each day but he could not recognise this man as his father.

Almal has most likely sustained damage to the association area in the cortex of the _____ lobe.

- A. occipital
- B. parietal
- C. frontal
- D. temporal

Question 6

Mazin's grandmother suffered a mild stroke. The doctor was concerned that the stroke had caused some damage to the right hemisphere of her brain.

The doctor informed Mazin that his grandmother may have some difficulty with

- A. moving her hand, understanding language, recognising family members.
- B. understanding language, recognising emotion, reading a magazine.
- C. recognising a tune, reading her shopping list, reading a map.
- D. imagining, completing a jigsaw puzzle, recognising emotion.

Question 7

A researcher was interested in the possible link between brain tumours and depression in elderly patients. She conducted an intensive study of six individual patients in a hospital using diagnostic tests, patients' interviews, and examination of the patients' medical records.

One limitation of this method for her research is that

- A. the research is not controlled for potential confounding variables.
- B. the reliance on patients' reports will not produce very detailed information.
- C. the patients cannot be randomly allocated to the control and experimental groups.
- D. it is too easy to generalise the results of this type of research.

Question 8

_____ neurons carry information from organs and muscles to the central nervous system while _____ neurons carry information to organs, muscles and glands from the central nervous system.

- A. Sensory, motor
- B. Motor, sensory
- C. Peripheral, autonomic
- D. Autonomic, peripheral

Question 9

The motor function of the somatic nervous system can be demonstrated by

- A. experiencing the cold sensation of ice on your skin.
- B. reflexively moving your hand away from a hot stove.
- C. feeling muscle soreness after playing sport.
- D. scratching your head.

Question 10

Hamish, a patient with severe epilepsy, had an operation in which his corpus callosum was severed to divide the right and left hemisphere of his brain.

A likely consequence of this operation is that

- A. Hamish's memory is affected.
- B. Hamish is unable to make verbal responses.
- C. Hamish has difficulty waving his right hand.
- D. Hamish has difficulty coordinating actions such as dressing himself.

Question 11

Which of the following is true of the autonomic nervous system (ANS)?

- A. The ANS is a vital part of the central nervous system (CNS).
- B. It is impossible to consciously influence the functioning of the ANS.
- C. The ANS ensures that the constantly changing energy requirements of the body are met.
- D. The ANS relays messages between the CNS and the voluntary muscles that control our internal organs and glands.

Question 12

The sympathetic and parasympathetic nervous systems

- A. are part of the reflex arc.
- B. cannot both be active at the same time.
- C. have opposite effects although they work together.
- D. are inactive unless the fight/flight response is activated.

Questions 13, 14 and 15 relate to the following information.

Nicole was attending a job interview for a promotion that was very important to her. Just before her interview, she felt her heart beating very fast and noticed that the palms of her hands were sweating. During the interview, Nicole noticed that her heart rate decreased and her palms felt much drier after about ten minutes.

Question 13

Which part of Nicole's nervous system was most likely to be dominant just before her interview?

- A. the fight/flight response
- B. the somatic nervous system
- C. the sympathetic nervous system
- D. the parasympathetic nervous system

Question 14

Which part of Nicole's nervous system was most likely to be dominant ten minutes after the start of her interview?

- A. the fight/flight response
- B. the somatic nervous system
- C. the sympathetic nervous system
- D. the parasympathetic nervous system

Question 15

What other symptoms might Nicole have experienced just before her interview, even though she may not have been aware of them?

- A. dilated pupils, increased release of glucose
- B. contracted airways, stimulated release of bile
- C. constricted pupils, increased digestive contractions
- D. increased hormone secretion, decreased release of glucose

Question 16

Stuart was accused of stealing money from his employer. He knew he was innocent of the crime, so he volunteered to take a polygraph test. Stuart failed the test even after it was repeated.

Stuart may have failed the test because

- A. he may have felt very relaxed and produced low physiological arousal during both the control and relevant questions.
- B. he may have unintentionally bitten his tongue and induced high physiological responses to the control questions.
- C. the polygraph measures physiological arousal which can be due to emotions other than guilt.
- D. the polygraph cannot accurately measure blood pressure and heart rate.

Question 17

A stressor is defined as any event, object or condition that

- A. an individual perceives as threatening.
- B. poses an actual threat to an individual.
- C. causes an individual to experience psychosomatic symptoms.
- D. stimulates an individual to activate the General Adaptation Syndrome.

Question 18

Alzheimer's disease causes serious disruption to memory and cognitive abilities.

A researcher wanted to use fMRI technology to investigate which areas of brain function are impaired in patients with advanced Alzheimer's disease.

This research may be seen as unethical if

- A. the patient's personal details remain confidential.
- B. the patient becomes unwell during the experiment.
- C. the researcher ends the experiment because the patient is distressed.
- D. the researcher proceeds on the basis of obtaining verbal consent from the patient.

AREA OF STUDY 3 – States of consciousness**Question 32**

Tom is concentrating on completing his Psychology examination paper.

His level of consciousness is best described as

- A. an altered state of consciousness.
- B. normal waking consciousness.
- C. controlled consciousness.
- D. automatic processing.

Question 33

Jack was on a long bus trip to the country. Although he wanted to enjoy the scenery, he found that he was drifting off to sleep for one or two minutes at a time and then waking again with a jerk.

Jack was most likely to be in

- A. rapid eye movement (REM) sleep.
- B. stage 2 sleep.
- C. stage 3 sleep.
- D. a hypnagogic state.

Question 34

Trinh is learning how to drive a car. She has difficulty driving well while listening to the radio or having a conversation, but her mother is able to conduct complex work conversations with another passenger while driving. The difference between Trinh and her mother in the ability to drive while undertaking other activities is that

- A. Trinh's mother is a more experienced driver and practice has turned driving a car into an automatic process for her.
- B. Trinh requires greater concentration when driving as she is still learning and driving a car is an automatic process for her.
- C. Trinh's mother is a skilled driver due to many years of practice and driving is a controlled process for her.
- D. Trinh's mother is not as anxious as Trinh, which allows her to carry out more than one activity at a time.

Question 35

A student is standing nervously outside the examination room, waiting to enter and start her examination.

If the electrical activity of the student's brain was measured, the brain wave pattern would most likely show

- A. alpha waves.
- B. beta waves.
- C. theta waves.
- D. delta waves.

Question 36

The presence of sleep spindles and occasional K-complexes is typical of stage _____ sleep.

- A. one
- B. two
- C. three
- D. four

Question 37

A typical night's sleep for an adult includes four to five sleep cycles.

Which of the following patterns best describes a typical sleep cycle from early in the night?

- A. awake, NREM stage 4, NREM stage 3, NREM stage 2, NREM stage 1, REM, NREM stage 4, NREM stage 3, NREM stage 2, NREM stage 1
- B. awake, NREM stage 1, NREM stage 2, NREM stage 3, NREM stage 4, REM, NREM stage 1, NREM stage 2, NREM stage 3, NREM stage 4
- C. awake, REM, NREM stage 4, NREM stage 3, NREM stage 2, NREM stage 1, NREM stage 2, NREM stage 3, NREM stage 4, REM
- D. awake, NREM stage 1, NREM stage 2, NREM stage 3, NREM stage 4, NREM stage 3, NREM stage 2, NREM stage 1, REM

Question 38

John's mother has expressed concern to the psychologist visiting his kindergarten that John has recently been waking at night in a distressed state after only a couple of hours of sleep. John is unable to recall what has caused him to be distressed.

The psychologist explains that John has most likely experienced

- A. a nightmare.
- B. sleep apnea.
- C. a night terror.
- D. a sleep disorder.

Question 39

Tran and Serge both complain about being tired. Tran complains of difficulty falling asleep and not staying asleep for enough time to be rested. Serge says he falls asleep quickly and finds it difficult to wake up.

It is likely that Tran is suffering from _____ whereas Serge is probably suffering from _____.

- A. hypersomnia; night terror
- B. insomnia; sleep apnea
- C. insomnia; hypersomnia
- D. hypersomnia; insomnia

Question 40

A researcher who is interested in studying the effect of soft music on the sleep patterns of infants would find it an advantage to use a repeated measures experimental design because

- A. she can use a double-blind procedure.
- B. it would eliminate participant differences.
- C. it would increase the number of participants she could use.
- D. it would eliminate the experimenter effect.

Questions 41, 42 and 43 all refer to the following information.

Doctor Goode conducted an experiment to investigate the claim that a particular herb helps people to focus their attention. She used an independent-groups design experiment with randomly allocated participants. The participants were not told whether they had been allocated to the experimental group or the control group.

She began with a test of attention (Attention Test A) to establish a baseline measure for all participants. Then, for the experiment, all participants were given a drink of water in identical cups. The drinks given to the experimental group also contained the herb which was treated to remove its taste and smell.

Finally, all participants sat a different version of the attention test (Attention Test B).

The results of Attention Test B indicated that the experimental group had improved its ability to focus attention compared to the initial baseline measure, but the control group had not. The results were statistically significant.

Question 41

Doctor Goode used a single blind procedure to control for

- A. placebo effects.
- B. practice effects.
- C. individual differences.
- D. experimenter expectations.

Question 42

It is likely that the results of this experiment were due to

- A. the effect of the independent variable on the dependent variable.
- B. lack of counterbalancing.
- C. the order effect.
- D. biased allocation.

Question 43

To control for experimenter expectations, Doctor Goode could have used

- A. a repeated measures experimental design.
- B. an independent-groups experimental design with counterbalancing.
- C. an independent-groups experimental design with a double blind procedure.
- D. a matched-participants experimental design with a single blind procedure.

Question 44

When studying human sleep patterns, a researcher has the responsibility to

- A. ensure participant confidentiality.
- B. debrief the participants at the start of the study.
- C. withhold information from the participants about the nature of the study.
- D. avoid short-term disruption of participant sleep patterns for the purpose of the study.

SECTION B – Short answer questions

Instructions for Section B

Answer all questions in the spaces provided.

AREA OF STUDY 1 – Brain and nervous system

Question 1

What does an electroencephalograph (EEG) measure?

1 mark

Question 2

Explain how electrical stimulation of the brain (ESB) may be used to locate which parts of the primary somatosensory cortex are responsible for sensation in the hands.

3 marks

Question 3

Describe one benefit of functional magnetic resonance imaging (fMRI) compared to ESB for conducting research on intact living brains.

1 mark

Question 4

A patient experiencing speech difficulties was treated for a brain tumour. A doctor wishes to check that treatment of the patient's brain tumour has been successful. He conducts both a positron emission tomography (PET) scan and a computerised tomography (CT) scan of the patient's brain.

Why might the doctor order both scans?

2 marks

Question 5

Tasha is a doctor in a busy general practice. Tasha returned to work after six months maternity leave to a very busy flu season that required working twelve-hour days to cope with the extra patient load. As well as being very busy at work, Tasha missed her baby son. After six weeks of this workload she developed a severe tension headache by the end of almost every working day. After a few days, Tasha's headaches went away although she was still working long hours in the busy surgery. When she caught the flu herself, Tasha had to take a week off work. After recovering and being back at work for a few days, Tasha was unable to get up to go to work one morning. When she consulted her own doctor, she was diagnosed as being extremely stressed and physically drained.

a. Which stage of the General Adaptation Syndrome (GAS) was Tasha most likely in when she contracted the flu?

1 mark

b. Explain why an illness such as the flu is experienced by Tasha during this stage of the GAS.

3 marks

c. State one psychological symptom Tasha may have experienced during the GAS stage when she was unable to get up for work.

1 mark

d. Explain the role of Tasha's sympathetic nervous system in stage 3 of the GAS.

2 marks

Question 6

A waiter brings Karen some coffee in a glass. Karen picks the glass of coffee up in her right hand. She decides that it is too hot to hold comfortably and puts it back down on the table after a few seconds. Using psychological terms, explain the role of the sensory receptors and the brain in Karen's action of putting the glass of hot coffee back down on the table.

4 marks

AREA OF STUDY 3 – States of consciousness

Question 11

Peter experienced a severe bout of fever when he became ill with the flu. On the day that he had a fever, he lay on the sofa but did not sleep, and his mother regularly brought him food and water. Later, when he had recovered, he asked his mother where she had been during the day when he had the fever. He had been unaware that she had been there, giving him his food and water. Although he had not been asleep, the fever had put Peter into an altered state of consciousness.

- a. Describe two psychological characteristics Peter may have demonstrated to indicate he was in an altered state of consciousness when he had the fever.

i. _____

ii. _____

1 + 1 = 2 marks

- b. Describe two physiological characteristics which may have indicated that Peter was in an altered state of consciousness when he had the fever.

i. _____

ii. _____

1 + 1 = 2 marks

Question 12

Roman is a distance runner who trains hard every day. He has volunteered to be a participant in a research study of sleep patterns of athletes. For the study, he is required to spend a night in a sleep laboratory where his sleep-wake cycle is recorded by the researcher.

- a. Name one device that the researcher might use to identify when Roman is in rapid eye movement (REM) sleep and describe what this device would indicate for this specific stage of sleep.

i. Device _____

ii. Description _____

1 + 1 = 2 marks

- b. The researcher observes Roman sleep-talking during the night. What stage of sleep is Roman likely to be in when he sleep-talks?

1 mark

Question 13

A psychologist, Dr Pradesh, wanted to study the effects of sleep deprivation on Year 9 male students. He observed students' hand-eye coordination after the students had been deprived of sleep. Dr Pradesh measured the students' coordination by their ability to catch a tennis ball thrown from a distance of five metres. He used a matched-participants experimental design.

- a. Compared to an independent-groups experimental design, explain one disadvantage of using a matched-participants experimental design.

1 mark

- b. Identify a participant characteristic which Dr Pradesh must match for his experiment. Explain why Dr Pradesh must match for this before he conducts his experiment.

Participant characteristic

Explanation

2 marks

- c. Describe what Dr Pradesh must do in order to obtain informed consent for this study.

2 marks

- d. Identify two psychological symptoms of one day's sleep deprivation that the participants are likely to experience.

2 marks

2010 Assessment Report

2010 Psychology GA 1: Written examination 1

GENERAL COMMENTS

Performance on the June 2010 Psychology examination was reasonably consistent across the three Areas of Study. The scores in the multiple-choice section were higher than those in the short answer section.

In the multiple-choice section all three areas were answered adequately, with mean performance for 'Brain and nervous system' (70 per cent) being the lowest. 'Visual perception' had a mean score of 75.5 per cent and 'States of consciousness' had a mean score of 78 per cent.

As in previous years, some responses to the short answer section lacked precision and completeness in descriptions and definitions, failed to refer to appropriate psychological information or failed to provide appropriate examples in answers (even when the requirement for this was explicitly stated in the question). Students performed best in 'Visual perception' (64 per cent mean), with 'Brain and nervous system' and 'States of consciousness' each having means of 50 per cent.

Teachers had clearly directed students' attention to key concepts and skills in the *VCE Psychology Study Design*. As in previous years, students generally demonstrated good knowledge and understanding of the curriculum. However, as in previous years, it was noted that in many of the questions where a specific context was stipulated, students ignored the instruction and gave generic answers. Many students failed to address all aspects of the questions in their answers; this was particularly true in Question 4 where the context was ignored and in Question 7 where students did not refer to the figures drawn in the examination. Many answers contained only generic descriptions.

Students need to read the short answer questions very carefully and check their answers against the question requirements. Highlighting the command terms before planning a response is good practice.

It is worth noting that the space provided for an answer should be regarded as a guideline as to how much a student should write.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

Students are reminded that they should answer all questions in the multiple-choice section of the paper. It is not possible to achieve a mark where no response is given. If students do not give a response, the likelihood that further answers on the computer-scored sheet will be out of synchronisation will be increased and students may miss out on further marks. If unsure, students are advised to mark the response that is the closest to their ideal choice for any question – it is always possible to change a response by carefully erasing and re-shading.

This section of the paper was moderately well answered with only two questions (11 and 20) resulting in a correct response rate of less than 50 per cent.

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Brain and nervous system					
1	31	2	53	3	The 'frontal lobe' (option A) was incorrect as it does not contain 'almost three quarters of the brain's neurons' as stated in the question. Information is processed in all lobes.
2	27	1	1	21	The corpus callosum is not found in the cerebral cortex (option D).
3	38	1	58	3	Option A (occipital lobe of the left and right hemispheres) would be correct for images in the central visual field.

Question	% A	% B	% C	% D	Comments
4	24	2	1	73	Option A was chosen by 24% of students. Mandy would certainly be able to give a laboured but meaningful description of the accident if the damage had been to Broca's area.
5	8	16	16	61	
6	5	5	7	83	
7	55	11	21	13	Option C was chosen by 21 per cent of students; however, the case study approach described was not an experimental design. Control and experimental groups are not relevant in this form of research.
8	77	14	6	3	Option D (scratching your head) was the correct alternative as it referred to voluntary muscle movement.
9	7	30	5	58	
10	7	12	8	74	
11	7	23	36	34	This question was poorly answered. Option A (The ANS is a vital part of the central nervous system [CNS]) can be eliminated as the ANS is not part of the CNS. Option B (It is impossible to consciously influence the functioning of the ANS) was incorrect because biofeedback depends upon conscious control of autonomic functions. Option D (the ANS relays messages between the CNS and the voluntary muscles that control our internal organs and glands) was a flawed statement as the ANS does not 'relay' messages. Its effect is on the visceral muscles; voluntary muscles do not control our internal organs and glands.
12	2	25	66	8	The sympathetic nervous system remains active as the parasympathetic nervous system works to establish homeostasis.
13	4	1	91	3	
14	1	1	5	93	
15	86	3	5	7	
16	4	6	88	1	
17	58	3	7	32	It is emphasised that a stressor can be identified because of the way an event is perceived by an individual, not by the physiological outcome of such an event.
18	1	33	3	63	Option B would have been unethical if the patient had become unwell and the researcher had continued and caused potential or real harm to the patient. This was not, however, the scenario described. The researcher has no control over the fact that the patient may become unwell.
19	18	24	50	9	Area of study 2 – Visual Perception
20	21	46	28	4	Visual sensation is part of the overall process of visual perception. The term refers to the physiological process that begins the perception process. There is no clear division between sensation and perception, but cognitive processing occurs only in the later stages of the perceptual process, indicating that option B was correct.
21	6	84	5	4	
22	63	9	18	9	Option C was a true statement but did not explain the difficulty experienced in the scenario.
23	3	9	11	77	
24	80	9	6	5	
25	17	6	67	11	It was surprising that 17 per cent of students chose option A, the false statement.
26	3	1	5	90	
27	7	4	88	1	
28	4	82	2	2	

Question	% A	% B	% C	% D	Comments
29	1	9	86	5	
30	83	8	6	2	
31	6	76	15	3	Area of Study 3 – States of consciousness
32	3	64	32	1	Option C was incorrect as 'controlled consciousness' is not a term used in this context. Students may have been thinking of controlled processes.
33	10	21	1	68	The full term for such a sudden awakening is a 'hypnic jerk', clearly identifying option D (a hypnagogic state) as the correct answer.
34	91	2	5	2	
35	8	85	4	2	
36	2	83	13	3	
37	2	33	4	61	Option B was chosen by 33 per cent of students. Graphs which show sleep cycles will clearly show that brief periods of intermediary NREM stages are experienced between Stage 4 NREM and the REM stage.
38	5	1	91	2	
39	0	3	93	3	
40	9	71	6	13	
41	81	3	7	8	
42	82	7	7	3	
43	7	5	77	10	
44	71	18	2	9	The choice of option B by 18 per cent of students was surprising, but serves to emphasise a point made many times in previous Assessment Reports. By definition, debriefing occurs after the research has been undertaken; it cannot occur before the research.

Section B – Short-answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Brain and nervous system

This section was generally well answered.

Question 1

Marks	0	1	Average
%	26	74	0.8

Electrical activity of the brain (in the form of brain waves)

Students' answers needed to include the term 'electrical'.

Question 2

Marks	0	1	2	3	Average
%	26	22	25	27	1.6

Electrodes deliver an electrical current to precise areas of the brain (on the somatosensory cortex). The patient reports where they are feeling a tingling sensation. When they report a tingling sensation in the hand, the researcher can conclude that the part of the brain stimulated is responsible.

Many students referred to motor function; however, this was not an appropriate response to this question.

Question 3

Marks	0	1	Average
%	17	83	0.9

Any of:

- fMRI can be used on all patients (unless the patient has a pacemaker or other metallic device implanted), whereas ESB can only be used on patients already undergoing brain surgery
- a detailed picture/movie can be taken from fMRI, not from ESB
- fMRI is non-intrusive
- fMRI can be used on normally functioning brains, whereas ESB is normally conducted on abnormal brains, making it difficult to generalise results.

Question 4

Marks	0	1	2	Average
%	27	15	58	1.3

A CT scan gives a clear image of the structure of the brain but not the function. A PET scan gives information about the functioning of different parts of the brain (but is less distinct in terms of structure). The doctor would need to measure both structure and function to ensure that the operation had been successful. (Both scans are useful for detecting brain abnormalities/cancers.)

Question 5a.

Marks	0	1	Average
%	65	35	0.4

Resistance

'Catching the 'flu' is a new stressor. Tasha had been dealing with the original stressor and her headaches had gone away, this demonstrates that she was in the stage of resistance. Many students attempted an 'umbrella' response by stating 'resistance or exhaustion'; however, this was not acceptable.

Question 5b.

Marks	0	1	2	3	Average
%	21	27	32	20	1.5

Stress hormones were released during the resistance stage to fight the stressor. Stress hormones (cortisol and adrenaline) remain at a high level for a long period of time because the stressor has not gone away. The strength of the immune system is reduced because it is fighting/it is suppressed by the stress hormones. This makes Tasha more susceptible to illnesses such as colds and flu which the immune system is less able to fight.

Question 5c.

Marks	0	1	Average
%	36	64	0.7

Any of:

- anxiety
- depression
- nightmares
- increased emotionality
- anger/irritability/short-tempered
- hopelessness
- helplessness
- flat affect.

Students must be careful to distinguish between psychological and physiological characteristics.

Question 5d.

Marks	0	1	2	Average
%	59	33	8	0.5

The Sympathetic Nervous System (SNS) releases stress hormones as long as the stress is present. The SNS attempts to maintain high arousal throughout this stage.

Question 6

Marks	0	1	2	3	4	Average
%	25	39	20	10	6	1.3

The sensory receptors in the fingers of the (right) hand relay the sensation of the temperature of the glass of coffee through the spinal cord to the primary somatosensory cortex in the left parietal lobe. The decision that the coffee is too hot is made in the frontal lobe – association cortex. The information is transmitted to the primary motor cortex in the left frontal lobe which sends neural impulses to the skeletal muscles in her right hand and arm to put the hot coffee down.

Many students discussed reflex responses; however, the question specifically referred to the 'role of the sensory receptors and the brain'. The process of replacing the cup on the table was not a part of the question as some students thought.

Area of Study 2 – Visual Perception

Question 7a.

Marks	0	1	2	Average
%	27	30	43	1.2

Proximity: Spatial proximity of elements causes us to group the four columns of dots into meaningful whole units (each with two columns of dots).

Figure-ground: The dark elements are perceived as the figure, standing out from the background (and separated from it by their contour or outline).

Similarity was not an appropriate Gestalt principle in this case. It was essential that reference was made to the stimulus diagram.

Question 7b.

Marks	0	1	2	Average
%	31	16	53	1.2

Gestalt principle: closure

Explanation: we perceive a large circle made up of smaller circles (despite the fact that the elements are not linked)

Similarity was an incorrect response. It was essential that reference was made to the stimulus diagram.

Question 8a.

Marks	0	1	2	Average
%	54	31	14	0.6

The true shape of the room is trapezoidal. Therefore, when the father moves from one corner to another he is actually moving further away from the viewer and casts a smaller retinal image on the viewer. Because the room appears rectangular, the viewer does not apply size constancy to take account of the father moving further away.

Reference to the given scenario was essential. Many students made reference to the witch moving or to both characters moving, contrary to the scenario presented.

Question 8b.

Marks	0	1	2	Average
%	41	47	12	0.7

The use of a camera restricts the viewer to monocular depth cues. Without binocular depth cues the viewer is unable to recognise that the room is not rectangular. The expression 'the peephole ...' was acceptable as the question stated that an 'Ames Room' was used.

Reference to the given scenario was essential.



2010 Assessment Report

Question 9a.

Marks	0	1	Average
%	32	68	0.7

Interpretation: if one object partially obscures another object, the partially obscured object is perceived to be more distant from the viewer (giving an impression of depth).

Question 9b.

Marks	0	1	Average
%	38	62	0.6

Linear perspective: lines that are parallel in the three-dimensional world (railway lines, the edges of a road, roof and floor lines of buildings) appear to become closer together as distance from the viewer increases (this is incorporated into the artwork to give the impression of depth).

Question 10a.

Marks	0	1	Average
%	10	90	0.9

Absolute

Question 10b.

Marks	0	1	Average
%	17	83	0.9

Differential or difference (JND was also accepted)

Question 10c.

Marks	0	1	2	Average
%	47	40	14	0.7

Present the moving target at varying distances from the observer to determine the distance at which the observer can detect the target about 50 per cent of the time.

Question 11a.

Marks	0	1	2	Average
%	18	30	52	1.4

Two of:

- memory disruptions or distortions
- perceptual and cognitive distortions
- change in emotional awareness
- altered perception of pain
- less or more self-control
- distorted sense of time
- decreased level of awareness
- less limitation on content.

Question 11b.

Marks	0	1	2	Average
%	39	24	37	1

Two of:

- increased heart (pulse) rate
- increased body temperature
- increased GSR
- changes to brainwaves in EEG
- changes to muscle tone (increased/decreased electrical activity on EMG)
- increased respiration rate
- slower reaction time.

2010 Assessment Report



Question 12a.

Marks	0	1	2	Average
%	13	59	29	1.2

Any of:

- EMG: low levels of electrical activity in the muscles of the body
- EEG: beta-like brainwaves – high frequency/low amplitude (saw-tooth patterns)
- EOG: high electrical activity in the muscles that move the eyes (muscles near the eyes), video monitor: no major body movement (some twitching), rapid eye movement.

The response needed to be relevant to Roman's REM sleep.

Question 12b.

Marks	0	1	Average
%	2	98	1

Any stage of NREM or REM sleep

Area of Study 3 – States of Consciousness

Students should be aware of elements that distinguish altered states of consciousness from normal waking consciousness.

Question 13a.

Marks	0	1	Average
%	63	37	0.4

Can be time-consuming (and expensive) to match participants on the variables. If one of the pair drops out, scores from the other must be discounted.

Question 13b.

Marks	0	1	2	Average
%	45	17	38	1

Participant characteristic: functional vision, coordination/sporting (catching) ability ('experience in ball sports' was accepted)

Explanation: to minimise participant differences as an extraneous variable

Students needed to refer to the variable identified in their answer to Question 13a.

Question 13c.

Marks	0	1	2	Average
%	14	61	25	1.1

He must give information regarding the nature of the study and/or risks and/or participants' rights. He must obtain consent from the parents.

Question 13d.

Marks	0	1	2	Average
%	16	39	46	1.3

Two of:

- difficulties with paying attention/concentrating
- difficulty thinking and reasoning, poor decision-making
- memory problems
- lack of motivation
- distorted perceptions (for example, time)
- increased/decreased emotionality or increased irritability.

'Long-term psychological effects' was not acceptable as there are no long-term psychological effects. 'Hallucinations' was not acceptable as these do not occur after only one night without sleep.

The following information relates to Questions 4 and 5.

In a radio advertisement Ramesh heard a 10 digit telephone number which he wanted to remember. Ramesh immediately tried to enter the number on his mobile phone. However, he could only remember the first six digits of the telephone number.

Question 4

The telephone number did not remain in Ramesh's _____ memory long enough for him to successfully enter it into his mobile phone.

- A. iconic
- B. procedural
- C. long-term
- D. short-term

Question 5

To retain the 10 digits of the telephone number for just enough time to enter it into his mobile phone, Ramesh could try

- A. chunking.
- B. consolidation.
- C. the primary effect.
- D. narrative chaining.

Question 6

The decay theory of forgetting may explain

- A. why some people are reported to have repressed memories.
- B. why amnesiacs sometimes retain their procedural memories.
- C. why elderly people remember childhood memories better than more recent memories.
- D. how information is lost from short-term memory.

Question 7

Mrs Spanos recently visited a friend who had moved into a new home in the country. It was difficult for Mrs Spanos to find her friend's home but, by following the map, she eventually arrived. The next time she visited her friend, she was able to find the house without needing to use the map.

To find her friend's home on the second visit, Mrs Spanos was using

- A. method of loci.
- B. iconic memory.
- C. procedural memory.
- D. state-dependent cues.

Question 8

When Gina was 8 years old she witnessed a robbery in a petrol station. It was a very frightening experience for her. However, ten years later, Gina could not remember anything about the event.

Gina's inability to remember was most likely due to

- A. infantile amnesia.
- B. anterograde amnesia.
- C. repression of the memory of the incident.
- D. state-dependent forgetting about the incident.

SECTION A – Area of study 1 – continued
TURN OVER

Question 9

Christos lost his debit card and the bank replaced it a week later. However, Christos now has difficulty remembering the new Personal Identification Number (PIN) for his new debit card because he keeps remembering the old PIN.

Christos is experiencing

- A. retrograde amnesia.
- B. anterograde amnesia.
- C. proactive interference.
- D. retroactive interference.

Question 10

Elvie is a healthy woman who recently celebrated her 90th birthday. At the party, Elvie's granddaughter made a speech highlighting all of Elvie's life achievements. However, after the speech, Elvie was unable to remember the details of her granddaughter's speech.

Elvie's inability to remember was most likely due to

- A. Alzheimer's disease.
- B. anterograde amnesia.
- C. motivated forgetting.
- D. age-related memory decline.

Question 11

Shelley was using mental arithmetic to calculate the cost of six bread rolls at the bakery.

Which subsystems of her working memory was Shelley using?

- A. the visuo-spatial sketchpad to visualise the calculation, the phonological loop to mentally say the times tables and the central executive to integrate her knowledge of multiplication
- B. the central executive to integrate her knowledge of multiplication, the visuo-spatial sketchpad to visualise the calculation and echoic memory to mentally say the times tables
- C. the visuo-spatial sketchpad to visualise the calculation, the phonological loop to integrate her knowledge of multiplication and the central executive to mentally say the answer
- D. the phonological loop to vocalise the multiplication, iconic memory to visualise the calculation and the central executive to mentally say the answer

Question 12

Michael is completing a French listening comprehension exercise.

According to the information-processing model of memory, which three processes are required for Michael to complete the task?

- A. attention, encoding and storage
- B. attention, storage and retrieval
- C. encoding, storage and retrieval
- D. encoding, storage and consolidation

SECTION A – Area of study 1 – continued

The following information relates to Questions 13 and 14.

Five years ago Samantha sustained permanent brain damage when she was in a serious cycling accident. Samantha can remember most aspects of her life prior to the accident. However, she cannot recall anything about the accident and she is unable to learn and remember new information.

Question 13

Samantha's inability to learn and remember new information is known as _____ amnesia.

- A. proactive
- B. retrograde
- C. retroactive
- D. anterograde

Question 14

Which part of Samantha's long-term memory is most likely to have been affected by her accident?

- A. sensory
- B. working
- C. procedural
- D. declarative

Question 15

The process of retrieval involves

- A. keeping information in short-term memory.
- B. moving information from long-term memory into short-term memory.
- C. visiting the place where the original memory was formed and encoded.
- D. moving information from short-term memory into long-term memory.

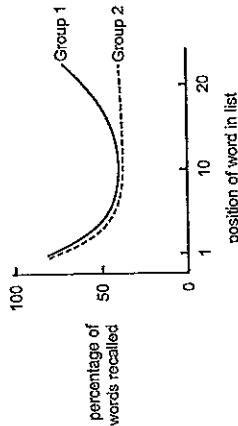
The following information relates to Questions 16 and 17.

Two groups volunteered to participate in a word recall experiment that was being conducted at a university.

Group 1 – The experimenter read aloud a list of twenty unrelated words to the participants. The experimenter then immediately asked the participants to recall as many of the words as possible.

Group 2 – The experimenter read aloud a list of twenty unrelated words to the participants. The experimenter then asked the participants to sing a nursery rhyme. After the participants had sung the nursery rhyme, the experimenter asked them to recall as many words as possible from the list they had heard before they sang the nursery rhyme.

The results of the experiment are shown in the figure below.



Question 16

Which of the following statements best explains the difference in recall between the two groups for the last items in the list?

- A. Recall was affected by context-dependent forgetting for Group 2 but not Group 1.
- B. The nursery rhyme between presentation of the word list and the recall test eliminated the primacy effect for Group 2.
- C. There was a longer delay between presentation of the last word and the test of recall for Group 1 than for Group 2.
- D. The singing of the nursery rhyme between the list and the recall test for Group 2 prevented participants from rehearsing the final items of the word list.

Question 17

The participants in Group 1 are most likely to have stored the first few words of the list in their _____ memory, and the last few words in their _____ memory.

- A. long-term; iconic
- B. iconic; short-term
- C. short-term; long-term
- D. long-term; short-term

The following information relates to Questions 18 and 19.

During a netball game Pina was briefly knocked unconscious when her head was bumped by another player. Pina suffered some memory loss.

Question 18

Consolidation theory suggests that Pina will be unable to remember

- A. the person who had scored the goal before her injury.
- B. the names of the members of her team.
- C. the position she plays for her team.
- D. her mobile telephone number.

Question 19

According to consolidation theory, Pina's memory loss is due to

- A. her short-term memory being erased.
- B. the destruction of existing memory traces.
- C. her memory traces for events just prior to the incident being repressed.
- D. a disruption to the formation of her memory traces for the events just prior to the incident.

Question 20

David completed one semester of Italian language studies. He studied for a mid-semester vocabulary test and learnt the 20 words in 100 minutes. Later in the semester, he revised the same 20 vocabulary words for the end of the semester examination. It took him 25 minutes to relearn all of the words.

What would be the saving score for David's relearning?

- A. 25%
- B. 50%
- C. 75%
- D. 100%

Question 21

The way in which a school textbook is designed can affect how well students learn the content.

According to the semantic network theory, the best way of organising the information in a chapter to assist students to remember the material would be to present the concepts in

- A. chunks.
- B. acronyms.
- C. hierarchies.
- D. paragraphs of text.

Question 22

James is studying for an Economics test which he will sit the next day.

Which of the following sequences would be best if James wants to minimise the effect of interference on his ability to remember the information for his test?

- A. study, sleep, test
- B. study, exercise, test
- C. study, listen to music, test
- D. study, complete his history homework, test

SECTION B – Short answer questions

Instructions for Section B

Answer all questions in the spaces provided.

AREA OF STUDY 1 – MEMORY

Question 1

Dr Sewell is interested in the effect of the passing of time on long-term memory.

In one of his studies, the participants were twenty males aged between 74 and 75 who had all been together as children in the same grade six class when they were at primary school. These participants had never attended a school reunion, and had had no contact with each other since they had left their primary school.

To conduct the study, Dr Sewell used an independent groups design and randomly allocated the participants to one of two experimental conditions. Each participant was individually tested.

For Condition 1, participants were required to name as many members of their grade six class as they could.

For Condition 2, participants were required to identify names of their 20 grade six classmates from a list of 40 names.

The results are indicated in the following table.

Mean number of grade six classmates correctly named
(maximum possible = 20 names)

Condition	Mean number of names correctly identified
Condition 1 Name as many grade six classmates as possible	5
Condition 2 Identify the correct names of the 20 grade six classmates from a list of 40 names	15

The difference between the mean scores for each condition was significant.

- a. Identify the type of long-term memory Dr Sewell was testing, and give a reason for your answer.

2 marks

- b. What form of retrieval was Dr Sewell testing in each condition?

Condition 1 _____

Condition 2 _____

2 marks

- c. Why did the participants perform better in Condition 2 than in Condition 1?

1 mark

- d. Is it possible for Dr Sewell to conclude from this study that old age affects memory? Explain your answer.

2 marks

Question 2

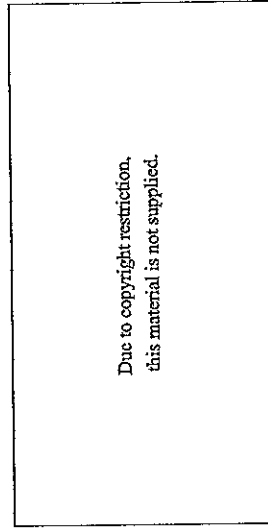
Dr Perlstein conducted a study on forgetting in humans. Twenty university students volunteered to be participants in his study. Dr Perlstein used an independent groups experimental design and randomly allocated participants to two groups.

- Group A: participants were asked to learn a list of 20 nonsense syllables.
- Group B: participants were asked to learn a list of 20 different animal names.

All the participants were given four minutes to learn their list. At the end of the four-minute study period, the list was removed and all participants were immediately tested for the free recall of their list.

The participants were subsequently retested for the free recall of their list at different time intervals over 31 days.

The results of Dr Perlstein's study are shown in the forgetting curves below.



- a. Why is the shape of the forgetting curve similar for both groups?

2 marks

- b. Why has Group B recalled a greater percentage of items than Group A?

1 mark

Question 3

The city mayor, Mrs Bell, needs to remember the details of her speech about plans for improving car parking, recycling, rubbish collection, pedestrian safety, care for the elderly and kindergartens.

With special reference to Mrs Bell's speech, explain how she could use the method of loci to remember these details.

3 marks

Question 4

What is one criticism of retrieval failure as a theory of forgetting?

1 mark

AREA OF STUDY 3 – RESEARCH INVESTIGATION

Background

Dr Nicholls is a psychologist interested in how the organisation of concepts in semantic memory might affect the recall of learned information. She predicts that people will recall more words from a studied list if the words are paired with words that are related in meaning.

Experimental design

To investigate this issue, Dr Nicholls designed a memory experiment in which all participants were presented with the same list of sixty pairs of words to learn.

Half of the word pairs in the study list were related in meaning (for example, cat–dog, nurse–doctor, apple–orange), and the other half were unrelated in meaning (for example, paper–shirt, window–butter, tree–hammer).

After studying the pairs of words the participants were presented with the first word from each pair as a cue and were required to recall the second word.

Dr Nicholls determined that the results would be significant if the *p* value obtained was less than 0.05.

Participants

Twenty first-year university students volunteered to participate in the experiment.

Procedure

The experiment consisted of a study phase and a test phase.

Study phase – All participants were asked to read aloud each of the 60 word pairs in the study list.

- half of the participants studied the 30 related word pairs first, followed by the unrelated word pairs
- half of the participants studied the 30 unrelated word pairs first, followed by the related word pairs

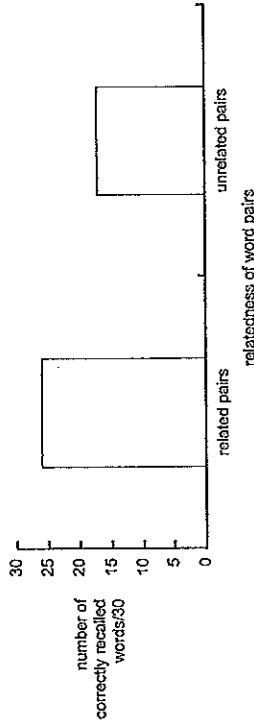
Test phase – The test phase immediately followed the study phase.

Participants were presented with the first word from each of the 60 word pairs as a cue for recall. Their task was to recall the word that had been paired with each cue word.

Results

The results of Dr Nicholls' study are presented in the figure below. She conducted a statistical test to determine whether the difference between the means for the two experimental conditions was significant and found that $p = 0.02$.

Number of words recalled in the cued recall task



Question 10

What are the dependent and independent variables in this experiment?

Dependent variable _____

Independent variable _____

2 marks

Question 11

What experimental design did Dr Nicholls use?

1 mark

Question 12

The procedure for this experiment states that

- half of the participants studied the 30 related word pairs first, followed by the unrelated word pairs
- half of the participants studied the 30 unrelated word pairs first, followed by the related word pairs.

a. What is the term for this feature of experimental design?

1 mark

b. Why is this feature important for the experimental design used by Dr Nicholls?

2 marks

Question 13

Write an operational hypothesis for Dr Nicholls' experiment.

2 marks

Question 14

Explain the findings of Dr Nicholls' experiment with reference to both the descriptive statistics provided in the graph and to the results of the statistical test.

Findings _____

3 marks

Question 15

a. What would be an alternative experimental design for Dr Nicholls' experiment?

1 mark

b. Which design do you think is more appropriate for this study: Dr Nicholls' design or your alternative design?

Provide a reason for your answer.

2 marks

Question 16

a. Name two ethical considerations that must be explained to participants by Dr Nicholls before the start of the experiment.

1. _____

2. _____

2 marks

b. Explain why each of these considerations is important from an ethical standpoint.

1. _____

2. _____

2 marks

END OF QUESTION AND ANSWER BOOK

Question 16

Outline one uncontrolled variable that could potentially confound the results and describe how it could affect the results.

Uncontrolled variable _____

Possible effect on results _____

2 marks

Question 17

In terms of participant selection, should these results be generalised? Explain your answer.

2 marks

Question 18

Parents/guardians and participants were debriefed after this study.

Outline two pieces of information that the researcher must give during the debriefing process.

1. _____

2. _____

2 marks

END OF QUESTION AND ANSWER BOOK

2010 Psychology: GA 3 Written examination 2

GENERAL COMMENTS

The mean score on the November 2010 paper was 64%, which was slightly lower than in 2009. This was mainly the result of decreased mean scores on the multiple-choice section.

The scores in the short answer section (overall mean 49% correct) were: Memory 53% correct, 48% for Learning and 47% for Research Methods. In the multiple-choice section, the mean score for Memory was 78% correct and the mean score for Learning was 77% correct.

A number of students did not answer some of the multiple-choice questions. Students are strongly encouraged to respond to each question; not only is it impossible to achieve a mark where no response is given, leaving a blank also increases the likelihood that later answers on the computer-scored sheet will be out of synchronisation and further marks may be lost. If they are unsure, students are advised to mark the response that is their 'best guess'. It is always possible to change a response by carefully erasing and re-shading. The use of a ruler, moved down the page as each question is answered, may help to ensure that the correct response line is being completed.

In the short answer section, some students failed to address command terms in the questions.

In the Research Investigation, many students gave generic answers and did not apply their knowledge to the case described. These students were therefore unable to demonstrate understanding of the concepts being assessed.

Marking Policy

An answer that does not address all aspects of the question cannot achieve full marks. Students are reminded to read questions carefully and answer all parts of a question.

Students are advised to check their spelling because meanings must be clear and unambiguous for marks to be awarded. While spelling is not directly assessed, there are many words and phrases used in Psychology that can become ambiguous if they are spelt incorrectly.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Memory					
1	90	2	6	1	
2	1	32	5	62	
3	3	1	7	88	
4	3	1	2	94	
5	96	1	1	1	
6	21	24	28	26	Decay constitutes one of the processes by which information is lost from short-term memory (as well as from sensory and long-term memory). All students received a mark for this question.
7	16	8	70	6	
8	1	3	93	3	
9	2	2	71	25	
10	14	13	4	69	
11	71	15	9	5	
12	14	8	76	2	
13	3	10	2	85	

Question	% A	% B	% C	% D	Comments
14	6	19	11	63	It was evident that students who selected working memory (option B) did not understand Baddeley's model.
15	1	84	9	6	
16	4	13	4	78	
17	2	9	8	81	
18	96	1	2	1	
19	3	1	6	89	
20	6	3	91	1	
21	21	9	64	7	The phrase in the question 'According to semantic network theory ...' should have alerted students that they were most likely to be seeking an aspect of the three characteristics of semantic network theory: nodes, links and hierarchical organisation.
22	93	6	0	1	
Area of Study 2 – Learning					
23	34	2	10	54	Many students selected option A. It is true that 'species-specific behaviour' is an alternative name for 'fixed action pattern', but this was not what the question was asking. The behaviours – often related to mating and reproduction – increase the chances of the perpetuation of the species; this is therefore a survival need.
24	1	1	2	97	
25	6	9	60	25	The unconditioned stimulus cannot become the conditioned stimulus under any circumstances.
26	91	6	1	2	
27	0	2	92	6	
28	1	4	93	2	
29	95	2	2	1	
30	89	6	3	2	
31	83	3	2	12	
32	7	29	7	56	Students who chose option B, which referred to the timing of the consequence, appeared to assume that the question was asking why the intended punishment was ineffective.
33	1	70	15	15	
34	9	19	25	47	Option D was incorrect as there was no indication that being in the classroom was an aversive experience. The fact that the children were prevented from accessing their normal privilege and that they 'wanted to play outside' shows that the strategy was a response cost – a punishment.
35	3	4	14	80	
36	8	4	65	23	The choice of option D by over 20 per cent of students indicated a lack of understanding of both observational learning and learning set. Learning set refers to the fact that learning in one situation may affect the ability to learn in another.
37	87	1	9	3	
38	10	11	4	75	
39	8	77	12	3	
40	11	6	3	80	
41	5	88	4	2	
42	87	1	1	10	
43	15	8	10	67	
44	1	2	1	96	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Memory

Question 1a.

Marks	0	1	2	Average
%	20	32	48	1.3

- Semantic – names learned (for example, from hearing the roll being marked)
- Episodic – recalling names in association with class events
- Declarative – either or both of the above explanations would be valid as 'declarative' includes both 'semantic' and 'episodic'

It was necessary for students to refer to the class and/or names. A common error made by students was using key terms as part of their own definition; for example, 'Declarative, because they had to declare the names of students they knew' or 'Episodic, because they had to remember episodes of their life'.

Question 1b.

Marks	0	1	2	Average
%	9	10	81	1.7

Condition 1: Recall (or free recall)

Condition 2: Recognition

Question 1c.

Marks	0	1	Average
%	51	49	0.5

Recognition is a more sensitive measure of retrieval than recall.

Question 1d.

Marks	0	1	2	Average
%	29	47	24	1

No, because:

- the results reflect differences in measures of retention, not differences in memory due to age
- all participants were the same age (there was no cross-age comparison)
- age was not an independent variable.

Question 2a.

Marks	0	1	2	Average
%	37	45	18	0.8

Forgetting is most rapid immediately after learning. The type of material learned does not affect the relative rate of forgetting.

Question 2b.

Marks	0	1	Average
%	60	40	0.4

Meaningful material is semantically encoded (deeper encoding than Group A). The semantic network is accessed in Group B, not in Group A.

Many students used everyday language instead of psychological terms. This caused responses to be less specific than required.

Question 3

Marks	0	1	2	3	Average
%	30	24	34	12	1.3

Encoding – The mayor should first visualise a familiar route, and then picture an item representing each important topic at a specific location along this route in the order in which she wants to recall them. For example, home to town hall, cars outside gate, recycling bins on the road, piles of rubbish in the street, pedestrian jumping off road at traffic crossing, elderly person with walking frame, and twin toddlers in pusher at town hall steps.

Retrieval – When giving the speech, the mayor can mentally move through the route, visualising and using each site along the route to cue recall of the important topics in sequential order. The various locations will act as retrieval cues for the items that have been visually linked to the locations.

For full marks it was essential that students discussed the:

- visualisation process
- method of visualising to assist encoding
- method of visualising to assist retrieval
- six items the mayor wanted to mention in her speech.

Question 4

Marks	0	1	Average
%	50	50	0.5

There may be no evidence that the memory was encoded or stored in the first instance. Consolidation may not have been completed or memory trace may not have formed. It is not possible to know whether or not cues being given relate to the memory (everybody's semantic network is different for each concept). It is virtually impossible to scientifically test for retrieval failure as a theory of forgetting (is it really forgotten?).

Many students mentioned the tip-of-the-tongue phenomenon as a criticism of this theory; however, this phenomenon supports the theory.

Area of Study 2 – Learning

Question 5

Marks	0	1	Average
%	27	73	0.8

Partial or any specific partial schedule (variable or fixed, interval or ratio)

Question 6

Marks	0	1	2	3	Average
%	35	23	20	21	1.3

- behaviour – wearing the chain
- consequence – positive reinforcement winning the race (feeling good because of winning)

This has increased the likelihood that Frank will repeat the behaviour of wearing the chain when he races.

Too many students tried to explain Frank's behaviour as classical conditioning, despite the wording of the question. There were many references to the chain being the stimulus and winning the race being the response, with no further attempt at using psychological language.

Question 9

Marks	0	1	2	Average
%	48	40	12	0.7

Retention occurs when the learner stores a mental representation (memory) of the observed behaviour and its consequences.

Any example was acceptable, but needed to include storing a mental representation (or remembering the process) of the observed behaviour.

Area of Study 3 – Research Investigation

Question 10

Marks	0	1	2	Average
%	27	20	52	1.3

Dependent variable: Recall or number of words correctly recalled
Independent variable: Relatedness of word pairs (related or unrelated)

Many students interpreted the description of the independent variable incorrectly as 'related word pairs first followed by unrelated', compared with 'unrelated word pairs first followed by related'. Many students identified the independent variable as related versus unrelated words, rather than word pairs.

Question 11

Marks	0	1	Average
%	49	51	0.5

The experimental design used by Dr Nicholls was repeated measures (within subjects).

Question 12a.

Marks	0	1	Average
%	63	37	0.4

The term for this feature of experimental design is counterbalancing.

Students who had not identified the experimental design correctly in Question 11 were unlikely to provide a correct response to this question as counterbalancing is most frequently associated with repeated measures designs.

Question 12b.

Marks	0	1	2	Average
%	62	19	20	0.6

Counterbalancing eliminates the confounding influence of order effects such as learning (practice) effects and/or boredom effects.

Students who had not correctly identified repeated measures (Question 11) and counterbalancing (Question 12a.) were unlikely to be able to achieve any marks for this question.

Question 13

Marks	0	1	2	Average
%	30	57	13	0.9

Either of:

- people will show better recall – operationalised as number of words recalled from a list of pairs in a related word-pair condition compared to an unrelated word-pair condition
- people who learn related pairs of words will show improved memory – operationalised as number of words recalled from a list of 30 pairs – compared to people who learn unrelated word pairs.

An operational hypothesis is a stated prediction of the outcome of the experiment that includes:

- statement of the population (not significant in this response)
- statement of the independent variable (IV)

- statement of the dependent variable (DV)
- operationalisation of the dependent variable.

(If the independent variable was also continuous, then it would also be operationalised.)

A correct response included appropriate operationalisation of the dependent variable and statement of the population, the independent variable and dependent variable.

Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the independent variable on the value of the dependent variable. Students are reminded that a hypothesis cannot be expressed as a question and that it need not be directional; '... relatedness of word pairs will affect memory ability ...' is appropriate. Population was not significant in this response.

Question 14

Marks	0	1	2	3	Average
%	15	28	38	19	1.6

Recall for related word pairs (mean = 25/30)

Recall for unrelated word pairs (mean = 17/30)

$p < .05$ – the difference in the means is statistically significant ($p = .02$)

It was evident that many students misunderstood the meaning of ' $p < .05$ '. It does not mean 'Fewer than 5 times in 100 this result will occur by chance', it means 'The probability that this difference would occur by chance alone is less than 5 per cent'. Students must be aware that 'statistical significance' is the term required and that 'significance' is a different concept.

Question 15a.

Marks	0	1	Average
%	26	74	0.8

Either of:

- independent groups
- matched participants.

Question 15b.

Marks	0	1	2	Average
%	22	40	37	1.2

An advantage (or a disadvantage) of one design compared with another.

Independent groups

- advantage: all measures taken at the same time – less time involved
- disadvantage: need large numbers of participants

Matched participants

- advantage: controls variables on which participants are matched (compared with independent groups) and there is no need for counterbalancing (compared with repeated measures)
- disadvantage: time taken in measuring the matching variable, and drop-outs – if one of a pair drops out, it eliminates the scores of both members of the pair.

Students could choose either of the alternative research designs.

Question 16a.

Marks	0	1	2	Average
%	16	56	28	1.1

2010 Assessment Report

Two of:

- possible harm/risk to participants
- withdrawal rights
- confidentiality of data
- voluntary participation.

Question 16b.

Marks	0	1	2	Average
%	73	23	4	0.3

Two of:

- no psychological or physiological harm to participants
- no invasion of personal privacy, which can cause stress
- no coercion, which can place participants under duress.

It was necessary for students to provide a response that corresponded with the ethical considerations listed in Question 16a.

Debriefing takes place after research has concluded and conclusions have been drawn. Many students indicated that participants should be told what would be involved in the research, implying incorrectly that debriefing occurs before the research.